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Canadian Coast Guard BOATING HANDBOOK



Canada

Fitting Out Your Boat

Licensing of Vessels

Licences are required for every vessel not exceeding 15 registered tons (and each pleasure craft not exceeding 20 registered tons) equipped with a motor or motors of 10 horsepower or more. Any Canada Customs office can provide a licence free on request. Before the boat is operated, the licence number issued must be marked in block characters, not less than 75 mm high and in a colour that contrasts with the background, on each side of the bow or on a board permanently attached as close to the bow as practicable. The number must be clearly visible from each side.

Construction Standards for Small Vessels

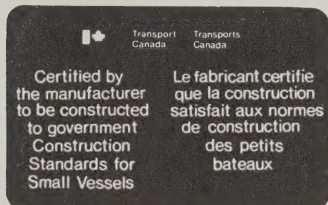
The *Small Vessel Regulations* require that certain classes of small vessels be built according to the Transport Canada Construction Standards for Small Vessels. These provide the purchaser with a boat manufactured to current construction specifications for safety and cover minimum requirements for hull construction, flotation, ventilation of explosive fumes, fuel and electrical systems. Basically, the Standards apply to:

power-driven pleasure craft not longer than 6 m and without an enclosed cabin for sleeping;

all pleasure craft, regardless of length or type of accommodation, with gasoline engines for propulsion or electrical generating power.

A manufacturer or importer of boats subject to these standards must declare by affidavit to the Department of Transport that the boats comply with them. The department then issues a decal that must be affixed to each boat.

Before buying a boat to which the Standards apply, prospective purchasers should ensure that the decal (illustrated below) is prominently displayed.



Equipment Requirements for Pleasure Craft

The requirements below apply to all pleasure craft, powered or not, including sailing vessels, canoes, kayaks and rowboats, but not racing shells or racing canoes used in or being prepared for competition. The required equipment must be maintained in good operating order. The enforcement of these regulations is carried out by peace officers.

Note that "approved" means approved by the Department of Transport. The

approved standard lifejacket (keyhole type) may be substituted for any approved small vessel lifejacket or approved personal flotation device (PFD) required by the Small Vessel Regulations. "Collision Regulations" means the Rules of the Road for the Great Lakes (where applicable) and the International Regulations for the Prevention of Collisions at Sea.

Vessels not longer than 5.5 m

1. One approved small vessel lifejacket, or approved PFD or approved lifesaving cushion, for each person on board.
2. Two oars and rowlocks or two paddles.
3. One bailer or one manual pump.
4. One Class B I fire extinguisher if the vessel has an inboard motor, permanently-fixed or built-in fuel tanks or a cooking or heating appliance

that burns liquid or gaseous fuel.

5. Navigation lights, if permanently fitted, that comply with the *Collision Regulations*.
6. Some means of making an efficient sound signal.

Note: Sail-operated surf-boards and power-driven bike craft need carry only one approved small vessel lifejacket or approved PFD for each person on board.

Vessels longer than 5.5 m but not longer than 8 m

1. One approved small vessel lifejacket or approved PFD for each person on board.
2. Two oars and rowlocks, two paddles or one anchor with not less than 15 m of cable, rope or chain.
3. One bailer or one manual pump.
4. One Class B I fire extinguisher if the vessel is power-driven or has a cooking or heating appliance that burns liquid or gaseous fuel.
5. One throwing device that may be either
 - an approved lifesaving cushion, or
 - a buoyant heaving line, or
 - an approved lifebuoy, 508 mm, 610 mm or 762 mm in diameter.
6. Six approved pyrotechnic distress

signals (flares) of which at least three must be Types A, B or C and the remaining three Types A, B, C or D, except if the vessel is:

- engaged in or preparing for racing competition and has no sleeping accommodation, or
 - operating exclusively in a river, canal or lake in which the boat can never be more than one mile from shore, or
 - propelled solely by oars or paddles.
7. Navigation lights, if permanently fitted, that comply fully with the requirements of the *Collision Regulations*.
 8. Some means of making an efficient sound signal.

Vessels longer than 8 m but not longer than 12 m

1. One approved small vessel lifejacket for each person on board.
Note: Sailing vessels without an enclosed accommodation space instead may carry an approved PFD for each person on board.
2. One approved lifebuoy, 610 mm or 762 mm in diameter.

3. One buoyant heaving line at least 15 m long.
4. One bailer and one manual bilge pump.
5. Twelve approved pyrotechnic distress signals (flares) of which at least six must be Types A, B, or C and the remaining six Types A, B, C, or D.

6. One anchor with at least 15 m of cable, rope or chain.

7. One Class B II fire extinguisher if the vessel is power-driven or has a cooking or heating appliance which

burns liquid or gaseous fuel.

8. Navigation lights and sound signalling apparatus that permit the vessel to comply with *Collision Regulations*.

Vessels longer than 12 m but not longer than 20 m

1. One approved standard lifejacket or one approved small vessel lifejacket for each person on board.

2. One approved lifebuoy 762 mm in diameter or two approved lifebuoys 610 mm in diameter.

3. One buoyant heaving line at least 15 m long.

4. Twelve approved pyrotechnic distress signals (flares) of which at least six must be Types A, B, or C and the remaining six can be Types A, B, C, or D.

5. One anchor with at least 15 m of cable, rope or chain.

6. Two fire buckets or other effective means of providing water to any part of the vessel to extinguish a fire.

7. (a) A manual or power-driven pump outside the machinery space,

with one fire hose and nozzle that can direct a jet of water into any part of the vessel;

(b) Two Class B II fire extinguishers, one of which is next to the accommodation space entrance and the other next to the machinery space entrance.

8. Efficient bilge pumping arrangements.

9. One Class B II fire extinguisher if the vessel is power-driven or has a cooking or heating appliance that burns liquid or gaseous fuel.

10. One fire axe.

11. Navigation lights and sound signalling apparatus that permit the vessel to comply with the *Collision Regulations*.

Vessels longer than 20 m

1. One approved standard lifejacket or one approved small vessel lifejacket for each person on board.

2. Two approved lifebuoys, 762 mm in diameter, one with a self-igniting light attached.

3. One buoyant heaving line at least 27.5 m long.

4. Twelve approved pyrotechnic distress signals (flares) of which at least six must be Types A, B or C and the remaining six can be Types A, B, C or D.

5. One anchor with at least 15 m of cable rope or chain.

6. Four fire buckets.

7. Two fire axes.

8. One power-driven pump outside

the machinery space with one fire hose and nozzle that can direct a jet of water into any part of the vessel.

9. Efficient bilge pumping arrangements.

10. One Class A II fire extinguisher in each accommodation space (no more than three such extinguishers need be carried).

11. Two Class B II fire extinguishers in the machinery space, one near the entrance.

12. Navigation lights and sound signalling apparatus that permit the vessel to comply with the *Collision Regulations*.

13. Radiotelephone equipment.

Fire Extinguishers

- Fire extinguishers required by the *Small Vessel Regulations* shall be of a type approved by:
- Underwriters Laboratories, Inc. or

– Underwriters Laboratories of Canada or
– The British Board of Trade for marine use.

Equivalent Fire Extinguishers

	Soda Acid and Water	Foam	Carbon Dioxide Gas	Dry Chemical	Halon 1211 Portable
Class	L	L	kg	kg	kg
A I	4.5	4.5			
A II	9	9			
B I		4.5	2.25	0.9	1.36 or 3.175
B II		9	4.5	2.25	

The designators, such as Class A I, are used for regulatory purposes and may not appear on the extinguisher label. All sizes and capacities are minimum requirements, and all dry chemical extinguishers with an ABC rating by any of the three authorities are suitable for Class A, B or C fires.

Liquid fire extinguishers, those discharging foam or water, should be emptied and recharged every year. Foam fire extinguishers should be located where they receive the minimum possible vibration, and where they are not subjected to temperatures greater than 37°C or less than 4.5°C.

CAUTION: Do not use foam fire extinguishers against electrical fires.

Carbon dioxide (CO₂) fire extinguishers should be weighed annually and recharged if they contain less than 90 % of their rated full capabilities.

Dry chemical fire extinguishers should have the pressure cartridge inspected annually and replaced if the weight is one half ounce less than that stamped on the cartridge. Dry chemical extinguishers tend to “cake”; therefore, they should be shaken by hand periodically, but normally stored where least subject to constant engine vibration.

Halon 1211 is a colourless, odourless gas that leaves no residue. The extinguisher should be inspected regularly according to manufacturer’s instructions. Whatever types of fire extinguishers are carried, it is important to be familiar with their operation and to place them where they are readily available for use and accessible for inspection.

Lifejackets

Lifejackets required by the *Small Vessel Regulations* must be of a type approved by the Canadian Coast Guard. This means that a prototype has been tested to standards formulated by a committee under the auspices of the Canadian General Standards Board and recognized by the Coast Guard. All the materials and components are laboratory tested. Then the lifejacket itself is tested for performance capabilities.

This jacket is intended to help save your life if you become involved in an accident and find yourself in the water. The following points will assist you:

1. Try out the lifejacket. Put it on and become familiar with the tie tape arrangements.

2. Basically, the jacket is reversible. The keyhole style, however, requires that the waist straps be tied around the body and not around the lifejacket. This allows the jacket to pivot away from your body and give the desired inclined, back-floating position.

3. To familiarize yourself with the jacket's capabilities, wade out until the water is about chest deep. Bend your knees and let the jacket support you. You will find that it inclines you in a back-floating position with your mouth clear of the water.

4. If you have to swim while wearing a lifejacket, use a back or side stroke.

5. You are responsible for maintaining the jacket in good condition.

(a) Do not use it for any other purpose such as a seat cushion, boat fender or kneeling pad.

(b) When it is dry, store it in a

well-ventilated, cool area.

(c) When it is wet, hang it in the open air or a well-ventilated area. Do not dry it in front of a radiator or other source of direct heat.

(d) Do not use harsh detergents, cleaning fluids or gasoline to clean dirty lifejackets. Never dry clean them.

(e) Kapok lifejackets can be damaged by rough treatment. If the vinyl inserts containing the kapok are split or torn, moisture will enter and the kapok fibres can become waterlogged and matted and lose their buoyancy. Discard any jacket that feels heavy and damp.

(f) Lifejackets made from unicellular foam are more durable than those filled with kapok, but rough treatment will break down the foam cells. Foam also tends to shrink with age or excessive exposure to heat or sunlight.

Children on boats should be made to wear their lifejackets at all times. They should be taught how to put them on and be allowed to try them out in the water. It is important that children feel comfortable in lifejackets, know what they are for and how they will keep them afloat.

Children do not float easily in a safe position (face up) because of their distribution of body weight and because they tend to panic. Violent movement of arms and legs, in an attempt to "climb out" of the water, tends to overcome the stability of the lifejacket. Approved lifejackets will keep children afloat but not always face-up. *Remember, a lifejacket is no substitute for adult supervision.*

Personal Flotation Devices

Personal Flotation Devices (PFDs), required by the *Small Vessel Regulations* as one of the alternatives for certain small vessels, are approved by the Department of Transport in a manner similar to approved lifejackets.

The devices are designed to keep a conscious person afloat but have less buoyancy and turning ability than approved lifejackets. They are intended for constant wear and have varying degrees of effectiveness depending on body size and type. Although PFDs increase the chances of survival, they do not guarantee it.

There are two approved types:

— Type I has inherent buoyancy consisting of unicellular foam or macrocellular elements.

— Type II has two buoyancy media, inherent and inflatable. The inflatable section has an oral inflation device and a manual device consisting of a cylinder of compressed CO₂ operated by a manual trigger.

Choose the PFD carefully. It should be suitable for your body type and size and for the kind of activity you intend to perform. Make sure the PFD carries a label showing Department of Transport approval.

Your PFD can remain in good condition year after year. Do not abuse it as a cushion, fender or kneeling pad. Hang it to dry in a well-ventilated area, not in front of a radiator or other source of direct heat. For Type II PFDs, follow the manufacturer's instructions closely.

CAUTION: PFDs using macro-cellular elements (air cells made from inflated plastic envelopes) as the buoyancy medium are subject to a loss of buoyancy over time. The manufacturers' approval certificates for these devices have been withdrawn by the Canadian Coast Guard. The devices themselves are still accepted for use on pleasure craft, but owners of these PFDs are strongly urged to test them in the water every few months to ensure that they are still capable of providing sufficient support.

Recommended Safe Loading and Engine Power


An inexperienced person must be particularly careful when attaching an outboard motor and, when starting the motor, should ensure that it is set in neutral and in the straight-ahead position. A motor started in gear when not so aligned may cause the boat to turn suddenly and capsizes.

The law requires every pleasure boat 5 m long or less, powered with an outboard motor or motors totalling 7.5 kw (10 HP) or more, to carry a plate issued by the Department of Transport stating the recommended maximum load and engine power. The recommended load capacity includes all the weights of passengers, engine, fuel and fuel tanks and all other equipment. This requirement should not be confused with the licensing of vessels (refer to a at page 2).

The engine power capacities recommended by Transport Canada are based on tests of many outboard motorboats on standard evaluation courses. Canadian boat manufacturers and importers participate in these tests, which are held frequently for assessing the performance of the latest boat designs and comparing them with the recommended capacities.

The efficiency of motor wells and motor and steering controls forward of amidships is reflected in the engine power ratings.

The Department of Transport charges \$1 for a capacity plate, an example of which is shown below:

			Transport Canada	Transports Canada
RECOMMENDED MAXIMUMS FOR NORMAL OPERATION		MAXIMUMS RECOMMANDÉS POUR OPÉRATION NORMALE		
No. — NO	kW	BUILDER — CONSTRUCTEUR		
Maximum Load Charge max.	kg	Model Modèle		
ADVERSE CONDITIONS REDUCE CAPACITY		LES CONDITIONS DÉFAVORABLES RÉDUISENT LA CAPACITÉ		

Obtain applications for these plates at any Canada Customs or C.C.G. Ship Safety office or from Canadian Coast Guard headquarters in Ottawa. Fill in the particulars; enter precise measurements in all the spaces provided. Mail the completed form in the reply envelope, enclosing a cheque or money order for \$1 payable to the Receiver General for Canada.

Operating Your Boat

Arrival and Departure Plans

Power boat operators and sailboat owners can assist in searches and help cut down on false alarms by following these procedures.

1. Your boat or yacht club should appoint, daily or weekly, a safety officer to whom all arrivals and departures should be reported.
2. If you plan to go on a cruise, give your safety officer an itinerary with estimated times of departure and arrival at your destination.
3. If you do not belong to a yacht club, give a relative, neighbour or other responsible adult your itinerary and arrange to get in touch when you arrive at your destination. If you do not make contact by a certain time, the person concerned should consult one of the search and rescue centres (refer to the inside front cover).
4. If you change plans while under way, call your home, club or contact person, and possibly the police. This allays worry and prevents a needless alert that might set off a comprehensive air and marine search.
5. Always carry the required charts and a serviceable compass.

Distress Signals (refer to inside front cover)

Always carry the international distress signal. This is a square flag, or an object resembling a square flag, with a ball or other circular object hoisted either above or below it. The flag and ball should be of any bright colour.

Marine Radio

Canadian Coast Guard radio stations located at various points on both coasts, on the Great Lakes and in the Arctic provide a safety service that includes information broadcasts on weather and aids to navigation, and facilities for handling messages or telephone conversations. The maritime service mainly uses medium frequency (MF) and very high frequency (VHF) radiotelephony. Complete information on the radiotelephone services provided by the Coast Guard is given in *Radio Aids to Marine Navigation*. Separate volumes dealing with the Pacific and with the Atlantic and Great Lakes areas are published simultaneously twice a year, on March 1 and September 1. The Atlantic and Great Lakes volume is also available in French. Annual subscriptions or single copies may be ordered from the Publishing Centre, Supply and Services Canada, Hull, Québec, K1A 0S9, or from authorized bookstores.

When using the two-way radiotelephone, always apply the correct procedures for calling and answering other stations and passing messages or information. These procedures and other pertinent information relating to licensing and operating of radiotelephone equipment are contained in the *Radiotelephone Operator Handbook Land/Sea/Air*, which can be purchased from the same sources as above.

Channel 16 (156.8 MHz) is used ONLY for distress, safety and calling purposes. Improper, over-long or commonplace transmissions do NOT belong on this frequency.

CAUTION: The regulations and recommendations in this handbook apply only to Canadian waters. Mariners intending to proceed to U.S. waters should, before leaving, ask the nearest U.S. Coast Guard Base about any requirements or restrictions related to their craft and intended voyage.

Weather Information

Small vessel operators and boating enthusiasts should be aware of the source and significance of local weather information because rapid changes can occur, particularly over large bodies of water.

Weather information is disseminated widely by the daily press and radio broadcasts on all normal channels. Operators of pleasure boats with AM and FM radio receivers should know the times at which weather information is broadcast in their areas. Information on times and schedules, together with the times of CBC weather broadcasts, are listed in *Radio Aids to Marine Navigation*.

Marine forecasts for the East and West Coasts of Canada and the Great Lakes are available for craft with MF or VHF receivers or radiotelephones. The VHF service provided by the Canadian Coast Guard Telecommunications and Electronics Branch is a continuous transcribed broadcast of weather information, notices to shipping and dangers to navigation. It is transmitted on Channels 21 to 83B on the Atlantic Coast and the Great Lakes, and on Channels 21 and 39 on the Pacific Coast.

A new service for local areas, Weatheradio Canada, is being instituted by Environment Canada. Continuous VHF broadcasts of current observations and marine forecasts are made by stations at Vancouver, Toronto, Montreal and Halifax, with repeater stations spread throughout Nova Scotia. Please check with the Atmospheric Environment Service for further details.

In addition to listening to forecasts, mariners should know these indications and results of rough conditions.

(a) Nearby thunderstorms can markedly increase wind speed, gustiness and direction. The accompanying heavy rain and/or snow can seriously restrict visibility. Obviously these areas should be avoided if possible. Thunderstorm clouds are identified by their huge, billowing vertical development. As they become active the tops spread out to form an anvil-like structure, quite distinctive if seen from a distance. From beneath, thunderheads appear heavy, dark and threatening. Lightning can produce unusual amounts of static on the radio, at distances often greater than those at which the flashes can be seen.

(b) The wind speed generally increases and becomes gustier near land or mountains, or in a channel. Wind direction also may change. Take special care near land or in channels when wind changes are combined with tidal or current action.

(c) Check the barometer. Falling atmospheric pressure can indicate trouble; therefore, check the barometer regularly and often.

(d) Monitor a local station for current and forecast marine weather.

Marine weather warnings are issued to alert boaters of impending hazardous conditions:

Small craft warnings are included in marine forecasts and near-shore forecasts if winds are expected to exceed 20 knots.

Gale warnings are included if winds are expected to exceed 34 knots but remain less than 48 knots.

Storm warnings are included if winds are expected to exceed 47 knots.

Marine weather forecasts do not simply assure a fine day, but include other critical information. For example, many small vessel operators or boating enthusiasts do not realize the significance of wind on the water. The effects of rough water on the handling characteristics and ultimate safety of a craft depend on many factors, including size, shape and load distribution. Each mariner, therefore, must know the limitations of his craft in adverse weather conditions. The following table indicates the effect of wind upon unsheltered waters.

Approximate Wind Speed in Knots	Water Surface Description	Probable Mean Wave Height in Metres
2	Ripples.	
5	Small, short wavelets. Crests do not break.	0.2
8	Large wavelets. Crests break. Foam.	0.6
13	Small waves. Frequent white-caps.	1.0
18	Moderate waves of longer, more pronounced form. Possibly fine spray.	2.0
24	Large waves. White foamy crests everywhere. Spray.	3.0
30	Water heaps up. Foam from breaking waves streaks along with the wind.	4.0
37	Moderately high waves. Edges of waves break into spindrift. Foam in streaks.	5.5
44	High waves. Foam streaks dense. Crests topple and roll over. Spray begins to reduce visibility.	7.0
50	Very high waves. Crests overhang. Foam blown in dense patches. Water tumbles heavily. Visibility reduced.	9.0

Reckless Operation

In general, power-driven vessels must keep out of the way of sailboats, rowboats and canoes. Every operator, however, must keep a proper lookout and take every precaution required by the particular situation as well as by the ordinary practice of seamen. For example, no vessel, powered or not, may obstruct or endanger the passage of a vessel that is restricted in its ability to manoeuvre.

Anyone operating a boat, air cushion vehicle, water skis, surfboard or any towed object in a manner dangerous to navigation, life or limb, is guilty of an indictable offence and liable to imprisonment or punishment on summary conviction.

Under the Criminal Code of Canada, this offence includes:

- operating a vessel when impaired;
- towing a person on water skis after dark or without another person keeping watch;
- failing to stop at the scene of an accident.

Charges can be laid against a reckless operator by “laying an information,” a procedure that requires making a sworn statement before a Magistrate or Justice of the Peace.

Overloading

Overloading is dangerous. The number of persons that can be carried safely depends on such factors as the type of boat, distribution of passengers and equipment to be carried. Each operator must know the limitations of his vessel.

As a general guide, the Canadian Coast Guard issues the following notice for posting at holiday resorts, boat hiring stations and campsites for the loading of rowboats:

Length of Boat	Number of Persons (smooth conditions)	Max. Weight Load
3 m	2	185 kg
3.7 m	3	260 kg
4 m	4	335 kg
5 m	5	440 kg

For rough water conditions, there should be one person less in the boat. Of course, common sense should dictate whether the boat should put out at all in bad weather. This applies particularly to boats less than three metres long, which may be suitable for calm water only.

Tips for Fishermen and Hunters

1. In open boats, do not wear high boots, particularly open-top rubber boots. Carry a second pair of ankle boots for use in the boat.
2. Do not stand up in a small boat when hunting or fishing.
3. Do not overload the boat with extra clothing and equipment.
4. Do not attempt to take a small boat out onto water where, if the weather deteriorates, you are unable to reach safety quickly.
5. Do not use canoes for fishing or hunting unless you are an experienced canoeist.

6. Remember that water temperatures are low in the fall and spring. If you fall overboard, your chances of survival are reduced considerably.

Hazards of Cold Water

In cold water, the skin and outer tissues cool rapidly but it takes 10 to 15 minutes before the heart and brain begin to cool. This lowered deep body temperature is called hypothermia and is a common cause of death after immersion in cold water.

Predicted survival time is from 2½ to 3 hours in 10°C water. This time is increased by extra body fat and decreased by small body size. Here are several hints for survival in cold water when wearing a lifejacket:

1. Swimming does not help you keep warm. Test results show that the average person cools faster when swimming than when staying still.

2. Certain regions of the body lose heat rapidly while a person is not moving in cold water. These are the head (which is normally out of water), the sides of the chest (where there is little muscle or fat) and the groin. You can try to reduce heat loss from these critical body regions by:

(a) assuming a fetal position or holding the arms tight against the side of the chest and raising the thighs;

(b) huddling together, when two or more persons are in the water.

Alcohol does not help survival. Never give it to a person suffering from hypothermia. Body heat may be retained by wrapping the survivor in blankets and restored through administering direct heat.

Common Sense Do's and Don'ts

Do

—Wear a lifejacket in a small boat, whether or not it has lifesaving cushions.

—Obey the regulations regarding lifesaving equipment, using only that stamped or labelled “approved” by the Department of Transport.

—Head for the nearest safe anchorage or landing when a storm threatens. Avoid the temptation to buck it.

—Learn the Rules of the Road and practise them.

—Slow down when passing rowboats and canoes, especially in narrow waters.

—Slow down in bad weather and when making sharp turns.

—Assist any boat in distress. Watch for the vertical or circular waving motion of a piece of light-coloured material, or of a light at night, or the arm signal (refer to inside front cover).

—Slow down when passing dredges or water where divers may be working.

—Keep the bilges clean and free of oil, gasoline and rags. Vent any enclosed areas into the open air.

—Check the battery and its ventilation.

—Respect your boat and know its limitations.

—Obey the regulations regarding fire precautions and fire extinguishing equipment.

—Carry an anchor and a sufficient length of sound cable, rope or chain (at least five times the average anchorage depth). Be sure that the inboard end of the line is fastened securely to the boat.

—Join a yacht or boat club, if possible, and keep fully aware of regulations and other information.

—When on a cruise, always carry the latest corrected charts and related publications.

—Obtain *Annual* and *Weekly Notices to Mariners* (available free from Aids and Waterways, the Canadian Coast Guard, Ottawa, K1A 0N7).

- Keep some spare clothing in a watertight plastic bag, plus a flashlight, whistle, knife, adequate first aid kit and emergency rations.
- Look out. Avoid contacting overhead electrical wires while launching or sailing.
- Have some suitable means for

persons in the water to board the boat.

- Although approved flares are required only on boats longer than 5.5 m, all boaters operating at night should carry a few red flares, preferably an approved type, in a watertight container.

Don't

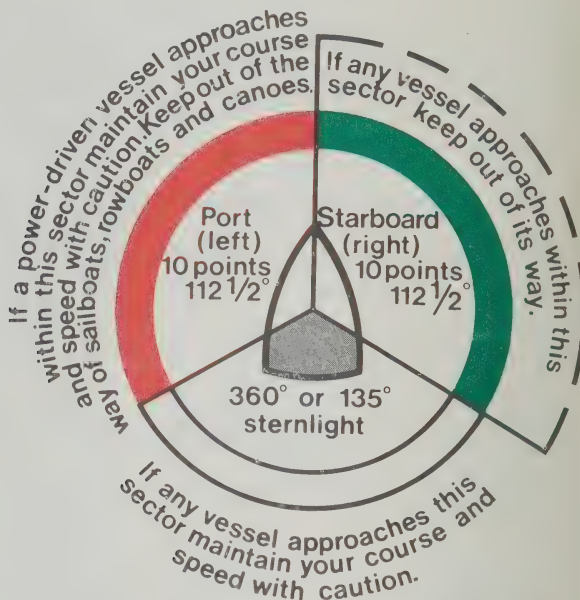
- Stand up or change seats in a small boat, particularly when it is fully loaded. If it is necessary to move, crouch low, keep your weight on the centreline and hold on to both gunwales.
- Stand up when starting an outboard motor.
- Operate near swimmers.
- Mix liquor and boating.
- Use a leaky or poorly-built boat.
- Cruise fast enough to create a dangerous swell when near small boats.
- Leave your tiller or steering wheel unattended when under way, especially in harbours, anchorages or narrow channels.
- Throw garbage overboard.
- Sound your horn or use the spotlight unnecessarily.
- Wait until the last minute to signify

your intentions of obeying the Rules of the Road.

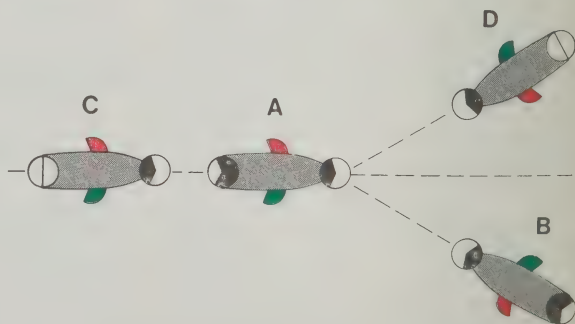
- Anchor close to other boats.
- Cruise at high speed in or near an anchorage.
- Hold impromptu races with other boats. Rowboats, canoes and other small craft are endangered by the wash.
- Attempt to swim ashore if your boat is capsized or swamped. Hang on to the boat until you are picked up.
- Be a show-off.
- Buzz bathing beaches. Swimmers are hard to see in the water.
- Carry out-dated charts and related publications in your boat.
- Create an excessive wake. This can endanger others in your vicinity and also cause erosion and property damage.

Operating Regulations

Steering and Sailing Rules



Collision Regulations Including Great Lakes Regulations



- A keeps clear of B
- B keeps clear of D
- C keeps clear of A and B
- D keeps clear of A and C

Two power-driven vessels meeting "head on": each alters course to starboard to pass on the port side of each other.

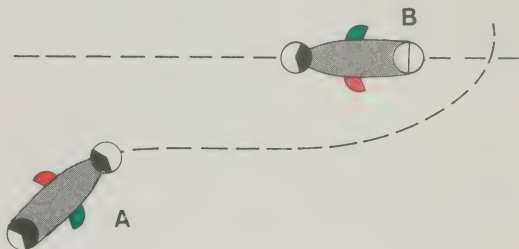
A blows one blast and alters course to starboard.

B blows one blast and alters course to starboard.

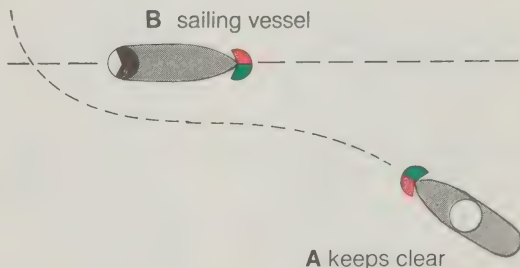


Two power-driven vessels crossing: the vessel which has the other on her own starboard side keeps clear.

A keeps clear of and must avoid crossing ahead of **B**

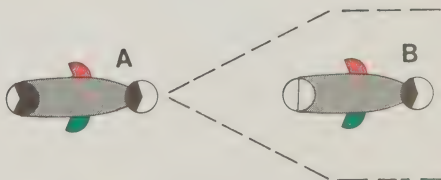


A power-driven vessel keeps clear of a sailing vessel









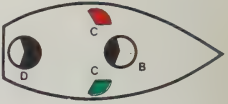
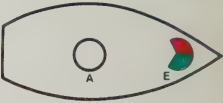
Any vessel overtaking another must keep clear.

WARNING: In a narrow channel, a power-driven vessel less than 20 m long or a sailing vessel must not hamper the safe passage of a vessel that can navigate only inside such a channel.



Navigation Light Symbols

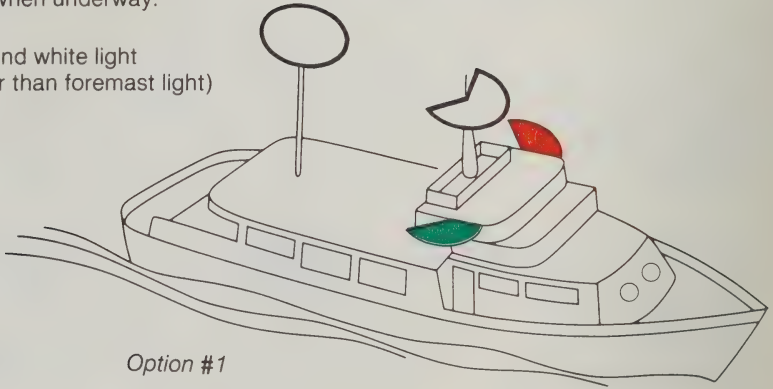
Symbol	Arc (degrees)	Arc (Points)	Function	on diagram
	360	32	(a) All-round masthead light (b) All-round anchor light	A
	225	20	masthead light	B
	112½	10	side lights	C
	135	12	stern light	D
	—	—	combined lantern (a) red and green; or	E
	—	—	(b) red, green and white	F

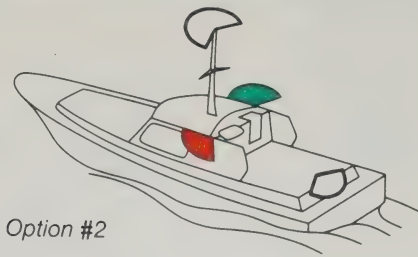


Navigation Lights
(Great Lakes)

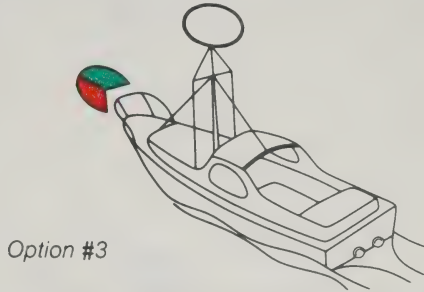
1. Motor boats over
8 m but not over 20 m
long, when underway:

All round white light
(higher than foremast light)





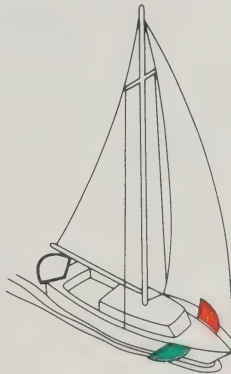
2. Motor boats not over 8 m long, when underway, have a third option:



3. Sailing vessels not over 20 m long, when underway:

A flashlight or lighted lantern showing a white light may be used in bad weather if it is not possible to fix a stern light.

A combined red and green lantern may be substituted for the separate red and green side lights.



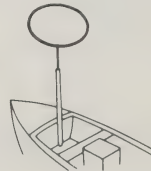
NOTE: A sailing vessel proceeding under sail and also being propelled by machinery shall exhibit the lights required for a power-driven vessel of similar length.

4. Rowing boats and canoes:

Exhibit a white light in the direction of any approaching vessel in sufficient time to prevent a collision.



5. Vessels not over 20 m long, when anchored, exhibit:

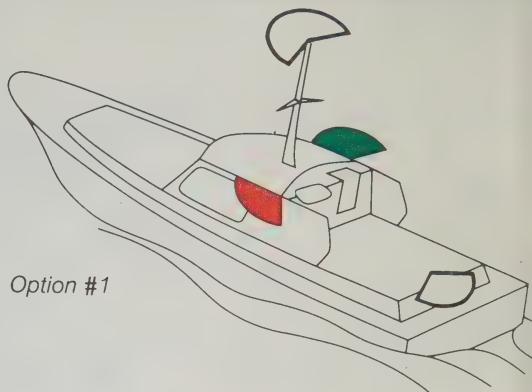


6. Use of searchlights: No person shall direct the rays of a searchlight or other blinding light on a vessel underway in a

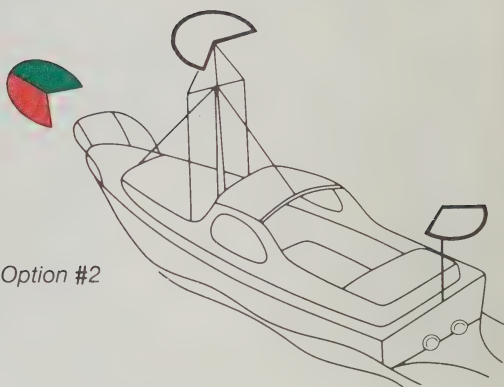
manner which may interfere with the vision of the person navigating or steering the other vessel.

Navigation Lights (waters other than the Great Lakes)

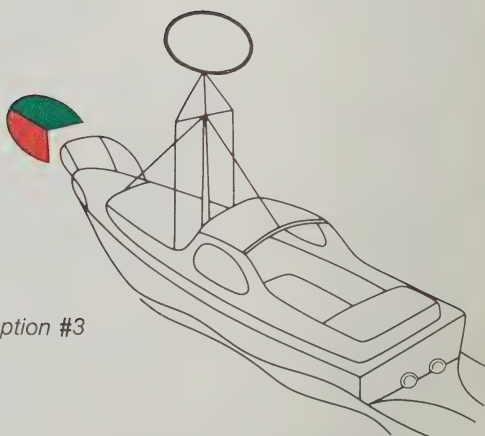
1. Motor boats less
than 20 m long, when
underway:



Option #1



Option #2

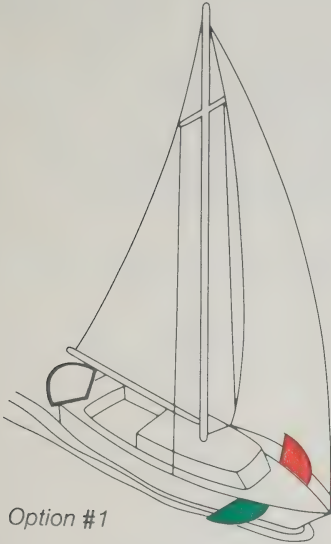


Option #3

2. Motor boats not over
7 m long, when
underway, have a third
option:

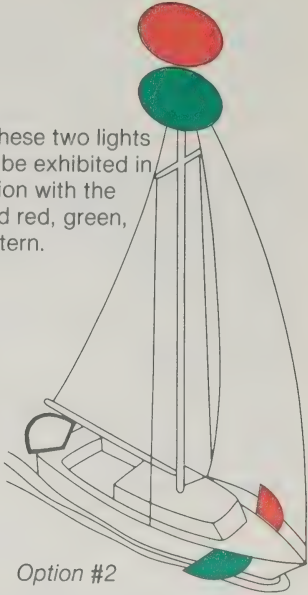
This Canadian "Special
Provision" is applicable
in Canadian roadsteads,
harbours, rivers, lakes
and inland waters.

3. Sailing vessels not over 20 m long, when underway:



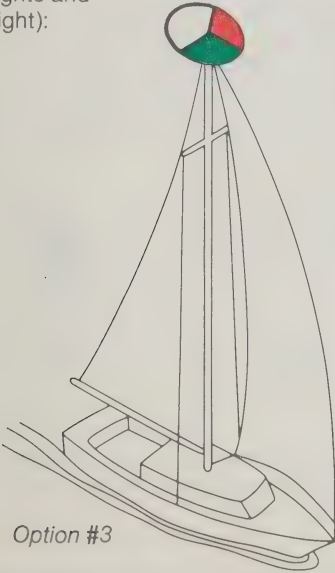
Option #1

NOTE: These two lights shall not be exhibited in conjunction with the combined red, green, white lantern.



Option #2

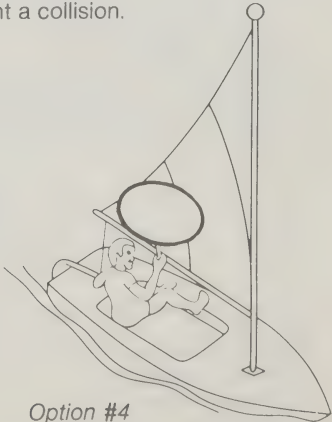
4. Sailing vessels less than 12 m long have a third option—a combined red, green and white lantern (sidelights and sternlight):



Option #3

5. Sailing vessels less than 7 m long, when underway, have a fourth option:

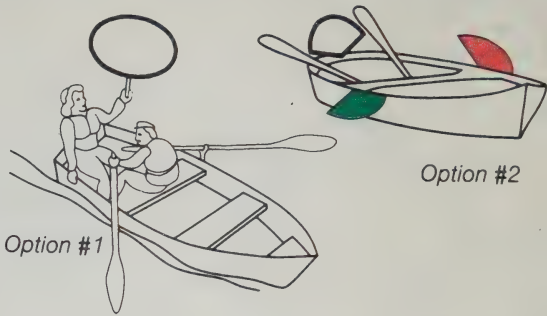
NOTE:
The flashlight or lighted lantern showing a white light is exhibited in sufficient time to prevent a collision.



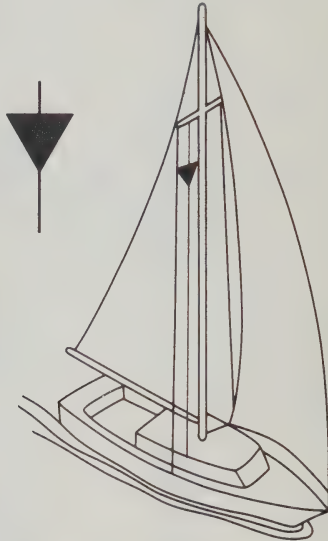
Option #4

6. A vessel under oars, when underway, exhibits:

NOTE: The flashlight or lighted lantern showing a white light is exhibited in sufficient time to prevent a collision.

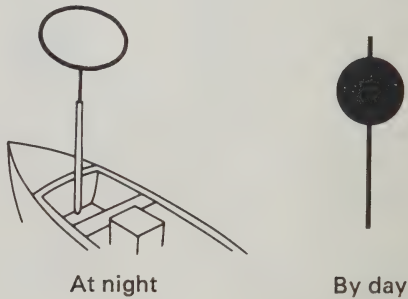


7. Sailing vessels proceeding under sail and also being propelled by machinery exhibit a cone shape (apex downward), by day:



NOTE: At night, exhibit the lights required by power-driven vessel of similar length.

8. Vessels not over 20 m long, when anchored:



NOTE: A vessel less than 7 m long is not required to exhibit these anchor lights or shapes:

Navigation Lights

Navigation lights for small vessels are described in detail in:

- the *Rules of the Road for the Great Lakes* and in Part VII of the *Small Vessel Regulations*—the Rules apply on Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan and Superior, their connecting and tributary waters, and the Ottawa and St. Lawrence Rivers and their tributaries as far east as but not including the Port of Montreal;
- the revised *Collision Regulations*, which apply in all other waters and include the *International Regulations for Preventing Collisions at Sea* and special provisions for Canadian waters.

Copies of these regulations can be purchased from the Publishing Centre, Supply & Services Canada, Hull, Quebec, K1A 0S9 or from authorized bookstores.

These regulations require small vessels to exhibit the appropriate navigation lights:

- between sunset and sunrise;
- between sunrise and sunset in restricted visibility; and
- in all other circumstances when deemed necessary.

Whistle Signals

Great Lakes (in all weathers)

One blast means "I am altering course to starboard" (right).

Two blasts mean "I am altering course to port" (left).

Notes: 1. Every power-driven vessel receiving one of these signals from another shall promptly respond with the same signal or sound the danger signal, which is five or more short and rapid blasts meaning: "Emergency or danger signal" or "Signal not understood."

2. A vessel 8 m long or less is not required to sound the manoeuvring signal but, if she does not do so, she must be manoeuvred in a way to prevent risk of collision with, or misunderstanding by, any other vessel.

Waters other than the Great Lakes (vessels in sight of one another)

- One short blast means "I am altering course to starboard."
- Two short blasts mean "I am altering course to port."
- Three short blasts mean "My engines are going astern."
- Five or more short and rapid blasts mean "Emergency or danger signal" or "Signal not understood."

Compasses

A compass is indispensable to any boat operating offshore or in a large lake or bay. It should be securely fitted, and located where it always is easily seen by the helmsman and where magnetic influences such as electrical wiring or movable steel objects are minimal.

The compass should be of a type suitable for marine use and should be adjusted periodically to compensate for magnetic forces. If you are not familiar with compass adjustment, seek professional assistance from a marine consultant.

If you frequently operate in one location, record compass headings during clear weather, so that in restricted visibility you will know what compass course is needed to proceed in the desired direction.

Nautical Charts

The *Charts and Publications Regulations* require every type of vessel used in navigation and not propelled by oars to carry, maintain and use appropriate charts, tide tables, lists of lights and other nautical publications.

Catalogues listing charts, related publications, prices and authorized dealers located throughout Canada and abroad are available from:

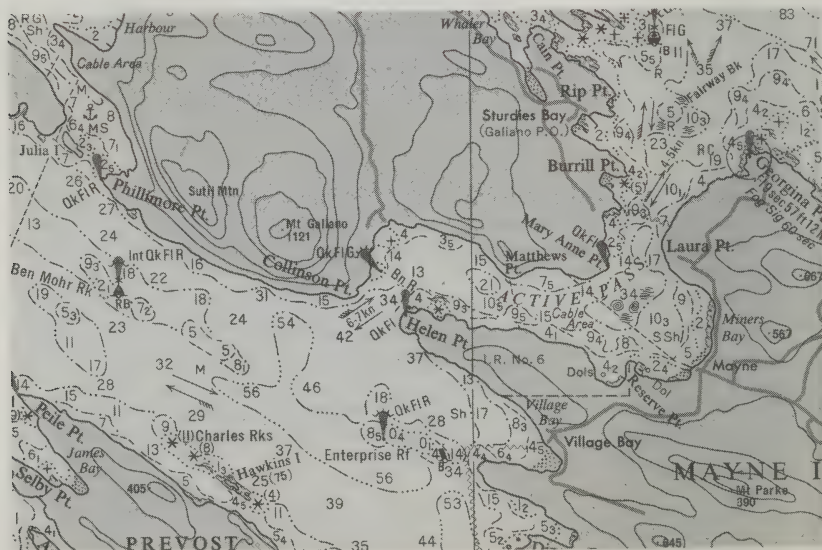
Hydrographic Chart Distribution Office,
Department of Fisheries and Oceans,
1675 Russel Road, P.O. Box 8080,
Ottawa, Ontario
K1G 3H6
Institute of Ocean Sciences,
P.O. Box 6000,
9860 West Saanich Road,
Sydney, B.C.
V8L 4B2

Some of the symbols and abbreviations shown in Chart No. 1 and used in nautical charts published by the Canadian Hydrographic Service are shown below:

Quality of the Bottom			
1	Ground	4	Oz Ooze
	Fond		Boue; Fange
2	S Sand	5	Marl
	Sable		Marne
3	M Mud; Muddy	6	Cy Clay
	Vase; Vaseux		Argile

Buoys	
1	Position of buoy Emplacement d'une bouée
2	Light buoy Bouée lumineuse
3	Bell buoy Bouée à cloche

Dangers	
1	Rock which does not cover (with height) Roche ne couvrant jamais (avec hauteur)
2	Rock which covers and uncovers (with height) Roche couvrant en découvrant (avec hauteur)

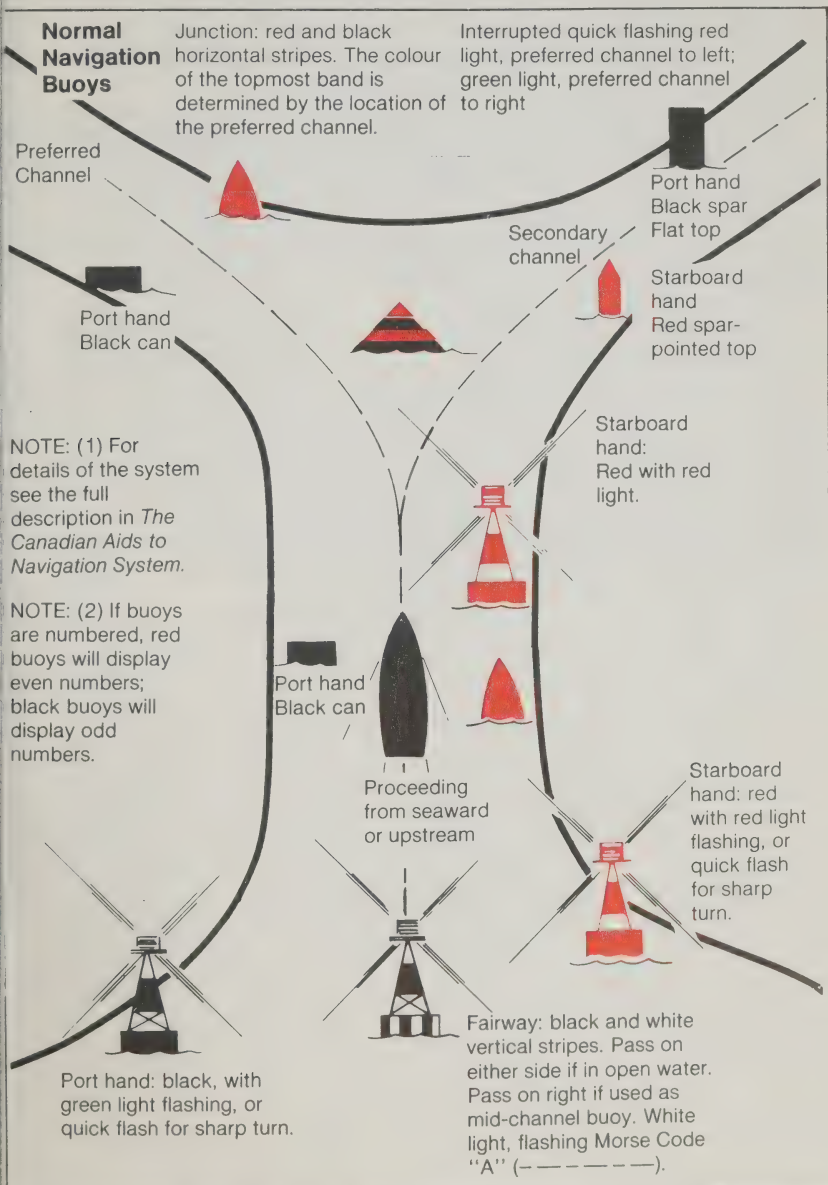


The Canadian Aids to Navigation System

Aids to navigation must be used in conjunction with available marine publications, including charts, light lists and sailing directions, in order to understand and interpret their function properly.

Special Purpose Buoys and

Standard Day Beacons (refer to inside back cover)



NOTE: For examples of other types of aids to navigation see inside back cover.

Entering and Exiting Locks/Heritage Canals

The lockmaster and lock operators, who are responsible for safe, efficient passage through the lock system, provide to boaters all necessary instructions for marshalling vessels and directing traffic into and out of locks. Traffic lights have been installed at most lockstations. Boaters should know these signals:

- A green light indicates the lock is ready for operation and vessels may proceed into the lock.
- A red light indicates the lock is not ready for operation and vessels may not proceed past the limit of approach.
- A flashing red light indicates the lock is being prepared for operation and vessels may not proceed past the limit of approach.

Vessels waiting to enter must not obstruct the path of exiting vessels.

Upon entering the lock chamber, vessels must be tied to the mooring cables on the walls of the lock. Lines must be tied loosely to permit movement up and down the mooring cables. If tied too tightly, the lines may become taut and may cause the vessel to capsize. For safety reasons, boaters should turn off engines, refrain from smoking and not operate open flame appliances during a passage through a lock. Lock operators then inform boaters when to restart their engines and exit.

Any boater with problems entering or exiting should request assistance from the lock operators.

Upon request by a Parks Canada officer, boaters must present a Canal Vessel Permit. The permit allows passage through lockstations during normal hours of operation and may be purchased at many marinas, tourist information centres and most lockstations. Advance purchase reduces passage time.

Towards the end of the operating day, vessels are accepted only if passage can be completed by the stated closing time. The last passage for a single lock commences 30 minutes before the specified closing hour. At multiple lockstations, a further 15 minutes in advance for each additional lock is required.

CAUTION: *Always watch for lock turbulence.*

Boat Safety

Refuelling Powerboats

Gasoline fumes are explosive and heavier than air; therefore, take these precautions when refuelling:

1. Moor the boat securely.
2. Shut off engines.
3. Don't smoke.
4. Extinguish all open flames.
5. Take portable tanks ashore.
6. Close hatches and doors.
7. Don't use electrical switches.
8. Send passengers ashore.
9. Hold nozzle firmly against filling pipe.
10. Don't overfill.
11. Wipe up any spillage.
12. Open up and ventilate.
13. Test. Use your nose.
14. Operate bilge blower before starting engines.
15. Start engines.
16. Let passengers re-embark.

Inboard gasoline engines must have a drip pan covered with wire gauze (or other approved equipment) fitted under the carburetor as well as having a suitable means of preventing gasoline from leaking into the bilges. If the engines are installed below deck or enclosed, backfire flame arrestors are required.

Ventilation of Gasoline-Powered Boats

The *Small Vessel Regulations* require any enclosed space in which an inboard gasoline engine is installed to be ventilated efficiently by suitable ventilators and an exhaust fan. Although this specific regulation applies only to inboard engines, all enclosed spaces in both inboard and outboard power boats should be well ventilated if they contain fuel tanks or other sources of gasoline.

An explosion and fire can occur when an enclosed space containing an accumulation of gasoline vapours is inadequately ventilated. Accidental, disastrous explosions usually happen when the engine is started.

To ensure efficient ventilation, fit at least two ventilation ducts in each space containing engines or fuel tanks, one duct for exhaust and one for supply. The exhaust duct should lead from the bilges under the engines or fuel tanks to the surface; the supply duct should extend from the surface to a level below that of the carburetor intake. Supply and exhaust ducts should be as far apart as possible and the supply cowls should be at least 10 cm higher than the exhaust outlets. Remember, the two ducts mentioned above may not be sufficient, and additional ventilation should be fitted as necessary depending on the size and arrangement of your boat. Ensure that no pockets of gas accumulate in boats with deep-V bottoms owing to lack of proper ventilation.

Each duct opening should be the same size, with an area no smaller than 42 cm² per metre of beam. The exterior ends of the ducts should have obstructed cowls or equivalent fittings with openings at least equal in area to those of the ducts.

Exhaust ducts may be fitted with wind-actuated, self-trimming or rotary exhauster heads, or with power-operated exhaust fans. If a power-operated fan is used, the electric motor and the switch for operating the motor should be installed outside the ventilation duct and, preferably, outside the machinery space. If this is impracticable, the motor and/or an explosion-proof switch may be installed within the machinery space. The exhaust fan should be run for about five minutes before starting the engine.

Liquefied Petroleum Gases

Liquefied petroleum gases such as propane and butane are being used more widely on pleasure craft. These gases are even more hazardous than gasoline and, for this reason, their use on passenger-carrying ships is forbidden by law. Propane and butane are heavier than air; therefore, they flow rapidly into the lower parts of the boat and are extremely difficult to remove.

If these gases are used on your boat, be sure that the equipment installation meets the standards of a governmental or equally impartial authority. Refer to the *Liquefied Petroleum Gas Regulations*. Actually, these apply to boats other than pleasure craft, but the requirements are just as applicable to pleasure craft as for work boats. They are available from the Publishing Centre, Supply & Services Canada, Hull, Québec, K1A 0S9, or from authorized bookstores.

WARNING: When using gas-burning appliances with a pilot light, be sure to provide adequate ventilation and ensure that no inflammable substances are placed near the naked flame. On Coast Guard inspected ships, such an appliance must have a device that automatically shuts off the gas in the main supply line when the pilot light goes out.

Flares (Pyrotechnic Distress Signal)

An approved pyrotechnic distress signal (flare) is waterproofed by the manufacturer and packed in a waterproof container. Instructions or diagrams showing the method of operation are marked on the signal, as are the lot number and date of manufacture. If four years or more have elapsed since the date of manufacture, the distress signal no longer meets the equipment requirements and should be replaced.

Refer to the inside front cover for examples of the different types of pyrotechnic distress signals.

Air Cushion Vehicles (ACVs)

All water users should know that these vehicles operate differently from conventional boats and ships in these ways:

- An ACV is most controllable and creates minimum wash when moving at high-speed. Do not be alarmed at high-speed operation.
- An ACV is not necessarily travelling in the direction that its bow or its navigation lights indicate. Do not be alarmed if an ACV is pointing straight at you—look instead for its direction of movement relative to you.
- When operating, an ACV has no draft. Do not try to follow an ACV and do not be alarmed if you see one heading for shore or shallow water at high speed.
- ACVs are subject to the *Collision Regulations*, but may have a high noise level. Sound signals may not be heard either by the ACV operator or other water users.

ACVs may be identified from other craft by an all-round flashing amber light, which they always must show when operating. (This is in addition to conventional navigation lights.)



Diving

For years, several organizations engaged in diving and underwater operations in Canadian waters have used the distinctive signal above to indicate these activities. This signal is *not* a substitute for the International Code of Signals single-flag signal "A", indicating "I have a diver down; keep well clear at slow speed". It is in general use, however, and liable to be encountered anywhere in navigable waters, particularly those most frequented by small vessels.

The signal is a square red flag with a white diagonal stripe extending from the head of the hoist to the bottom of the fly. It may be shown from a vessel, marine plant or floating marker. The signal indicates only that underwater operations are taking place and does not confer any special rights or privileges on the exhibitor.

Mariners and others should exercise particular vigilance and care when navigating in waters where diving signals are exhibited.

Radar Reflectors

Every pleasure craft shorter than 20 m or constructed primarily of materials other than metal should have a passive radar reflector that:

- provides a response in the 3-cm marine radar band equivalent to an effective reflecting area of not less than 10 m² through 360 degrees;
- is located above all superstructures, if practicable, at least 4 m above the water;
- is positioned and painted to be visually inconspicuous;
- can continue to reflect under any likely conditions;
- is clearly marked to indicate any preferred orientation of mounting.

Note: A radar reflector need not be carried where it is not essential for the safety of the vessel or is impracticable to fit.

Search and Rescue

The Department of National Defence and the Department of Transport (Canadian Coast Guard) are the main departments involved in all SAR activities in Canadian waters and on the high seas off the Canadian coast. The Departments of Fisheries and Oceans, Indian Affairs and Northern Development, Energy, Mines and Resources, and the Royal Canadian Mounted Police also assist in certain circumstances.

Air and sea SAR operations are carried out, respectively, by National Defence aircraft and specialized units of the Canadian Coast Guard. A volunteer marine rescue auxiliary organization is also coordinated by the Canadian Coast Guard.

The Department of National Defence maintains 24-hour Rescue Coordination Centres (RCCs) at Halifax, N.S.; Trenton, Ont.; and Victoria, B.C. Each of these centres is manned by Defence and Coast Guard rescue experts. The Canadian Coast Guard also operates a Search and Rescue Emergency Centre (SAREC) at St. John's, Nfld., and Québec, P.Q., for the coordination of all local marine SAR incidents. All rescue coordination centres are the headquarters for a coordinated network of agencies trained to search for and rescue vessels in distress.

Free information on the Canadian SAR organization for a given region may be obtained from:

Canadian Coast Guard,
Regional Manager,
Search and Rescue,
P.O. Box 1300,
St. John's, Nfld.
A1C 5N5

Canadian Coast Guard,
Regional Manager,
Search and Rescue,
101 Champlain Blvd.,
Québec, P.Q.
G1K 4H9

Canadian Coast Guard,
Regional Manager,
Search and Rescue,
1661 Whyte Ave.,
Vancouver, B.C.,
V6J 1A9

Canadian Coast Guard,
Regional Manager,
Search and Rescue,
P.O. Box 1013,
Dartmouth, N.S.
B2Y 3Z7

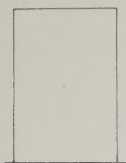
Canadian Coast Guard,
Regional Manager,
Search and Rescue,
Toronto Star Building,
20th Floor,
One Yonge St.,
Toronto, Ontario.
M5E 1E5

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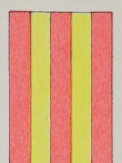
Special Purpose Buoys



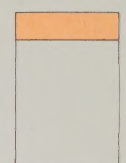
Anchorage



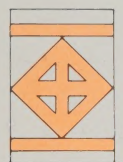
Cautionary



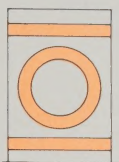
Scientific



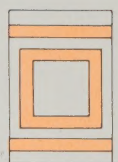
Mooring



Keep-out

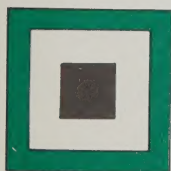


Control

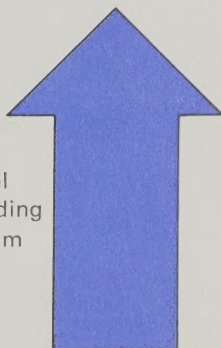


Information

Standard Day Beacons



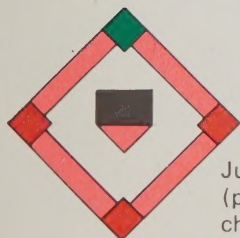
Port
hand



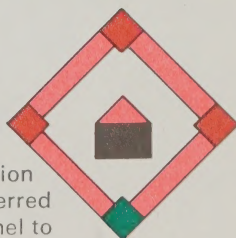
Channel
proceeding
upstream



Starboard
hand



Junction
(preferred
channel to
right)



Junction
(preferred
channel to
left)

For more detailed information, consult *The Canadian Aids to Navigation System* which is available free from Transport Canada, Place de Ville, Ottawa, Ontario K1A 0N5

